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— 6. A surface sensing device for use in position determining apparatus and which includes a stylus having a workpiece-contacting tip and an optical transducer system, said optical transducer system comprising:

a light source for producing a beam of light directed internally of the stylus towards the tip of the stylus;

an optical component mounted adjacent the tip of the stylus to return the beam, wherein lateral displacement of the stylus tip causes a corresponding lateral displacement of the returned beam; and

a detector positioned relative to the returned beam to receive the beam and detect an amount of lateral displacement thereof, thereby producing a signal indicative of the amount of lateral displacement of the stylus tip.--

— 7. The surface sensing device according to claim 6, wherein the detector detects the direction of the lateral displacement of the turned beam, thereby producing a signal indicative of a direction of the lateral displacement of the stylus tip.--

— 8. The surface sensing device according to claim 6, wherein the optical component reflects the returned beam to a focused spot.--

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— 9. The surface sensing device according to claim 8, wherein the spot lies substantially at an end of the stylus remote from the workpiece-contacting tip.--

— 10. The surface sensing device according to claim 6, wherein the light source and the detector are mounted to fixed structure to which the stylus is connected.--

— 11. The surface sensing device according to claim 6, wherein the optical component is a retro-reflecting device which is substantially insensitive to tilting of the stylus tip.--

--12. The surface sensing device according to claim 6, wherein the stylus forms part of a stylus assembly which comprises a relatively stiff stylus carrier and a relatively flexible stylus.--

--13. The surface sensing device according to claim 12, wherein the stylus carrier is connected to a housing of the device and the light source and detector are mounted to the housing.--

--14. The surface sensing device according to claim 6 including a focusing element which receives the returned beam and directs it onto the detector.--

--15. The surface sensing device according to claim 3, wherein the detector detects a direction of the lateral displacement of the returned beam, thereby producing a signal indicative of the direction of the lateral displacement of the stylus tip.--

--16. The surface sensing device according to claim 3, wherein the optical component reflects the returned beam to a focused spot.--

--17. The surface sensing device according to claim 16, wherein the spot lies substantially at an end of the stylus remote from the workpiece-contacting tip.--

--18. The surface sensing device according to claim 3 including a focusing element which receives the returned beam and directs it onto the detector.--

REMARKS

Claims 2-18 are pending. Applicants appreciate the indication that claims 2-5 are allowed. By this Amendment, claims 3 is amended to recite a "stylus" instead of --hollow stylus-- to broaden the scope of this claim. New claims 6-18 are added to claim new subject matter disclosed in the specification. No new matter is added. Reconsideration based on the above amendments and following remarks is respectfully requested.

The attached Appendix includes marked-up copy of the claim (37 C.F.R. §1.121(c)(1)(ii)).